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国际互认
检测
TESTING
CNAS L2073

Test Report

No 31/2021

Client Name	SunTech UK Ltd
Product Name	eFOLDi Scooter
Item No.	MK1.5
Type of Test	Entrusted Test

**National Quality Supervision & Test
Center for Rehabilitation Technical Aids**



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9. The informations related to the product are all provided and held legally responsibility by the client.

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Product Name	eFOLDi Scooter	Sample No.	31/2021-1A
	Send sample (√) Sampling ()		
Trade Mark	eFOLDi	Item No.	MK1.5
Client Name	SunTech UK Ltd	Type of Test	Entrusted Test
Client Address	25 Ormside Way, Holmethorpe Industrial Estate, Redhill, Surrey, RH1 2LW, UK.	Production No. and Batch No.	/
Manufacturer	SunTech UK Ltd	Sampling of Single No.	/
Inspected Entity	SunTech UK Ltd	Date Of Production	/
Sampling Unit	/	Sample Quantity	1
Sampling Location	/	Sampling Base	/
Sampling Date	/	Test Site	The test center lab
Date Received	5-Mar-2021	Inspection Date	5-Mar-2021~ 28-May-2021
Load Level	120kg	Type	Class B
Inspection Items	Excluding the requirements of ISO 7176-21:2009.		
Inspection Basis	BS EN 12184:2014 <Electrically powered wheelchairs, scooters and their chargers — Requirements and test methods>		
Test Conclusion	The inspected items of the samples are qualified with the requirements of BS EN 12184:2014.  (Inspection unit official seal) Issue date: 31-May-2021		
Note	1) test object does meet the requirement — Pass 2) test object does not meet the requirement — Fail 3) test case does not apply to the test object— N.A. 4) blank — /		

Approved by: *Gu Huiru*

Examined by: *Yan Wei*

Tested by: *Zhang Weibang*
Zhong Shusen

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No.	Test Item	Standard Clause	Performance Indicator		Test Result	Item Conclusion	Note
1	Ability to climb rated slope	8.1.2	The wheelchair shall be capable of climbing at a speed not less than 2 km/h: — the applicable rated slope for the type class of wheelchair specified in Table 1, or — the rated slope specified by the manufacturer, whichever is greater.	Class A: 3°	N.A.	N.A.	/
			Class B: 6°	5.6km/h	Pass	/	
			Class C: 10°	N.A.	N.A.	/	
2	Ground unevenness	8.1.3	The wheelchair shall be capable of driving when any of its wheels is raised to a height specified in Table 1 for ground unevenness.	Class A: 10mm	N.A.	N.A.	/
			Class B: 30mm	Pass	Pass	/	
			Class C: 50mm	N.A.	N.A.	/	
3	Maximum downhill speed	8.1.4	The wheelchair shall not exceed 125 % of its maximum speed on the horizontal, when driving down. — the applicable rated slope for the type class of wheelchair specified in Table 1, or — the rated slope specified by the manufacturer, whichever is greater.	Class A: 3°	N.A.	N.A.	/
			Class B: 6°	12.5 km/h	Pass	/	
			Class C: 10°	N.A.	N.A.	/	

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8.1.5 Dynamic Stability							
The dynamic response score of the wheelchair shall be 2 or 3 as specified in Table A.1 of ISO 7176-2:2001 when tested on							
— the applicable rated slope for the type class of wheelchair specified in Table 1, and							
— the rated slope specified by the manufacturer.							
Test	Antitip devices	Method of retardation	Stability score Ramp angle(°)				Comments
			0	3	6	10	
Rearward Dynamic Stability							
Starting forwards	With antitip devices		—	—	—	—	N.A.
	Without antitip devices		—	—	—	—	N.A.
Stopping after travelling forward (horizontal only)	With antitip devices	R Release	—				N.A.
		P Power off	—				N.A.
		A Applying reverse	—				N.A.
	Without antitip devices	R Release	—				N.A.
		P Power off	—				N.A.
		A Applying reverse	—				N.A.
Braking when travelling backwards	With antitip devices	R Release	—	—	—	—	N.A.
		P Power off	—	—	—	—	N.A.
		A Applying reverse	—	—	—	—	N.A.
	Without antitip devices	R Release	—	—	—	—	N.A.
		P Power off	—	—	—	—	N.A.
		A Applying reverse	—	—	—	—	N.A.
Forward dynamic stability							
Braking when travelling forwards	N.A.	R Release	—	—	—	—	N.A.
		P Power off	—	—	—	—	N.A.
		A Applying reverse	—	—	—	—	N.A.
Dynamic stability in lateral directions							
Turning on a slope	N.A.	N.A.	—	—	—	—	N.A.

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No.	Test Item	Standard Clause	Performance Indicator		Test Result	Item Conclusion	Note
5	Obstacle climbing and descending	8.1.6	The wheelchair shall be capable of climbing and descending obstacles of the height specified for the type class of the wheelchair without any part of the wheelchair other than wheels or a kerb climbing device contacting the obstacle or the test plane.	Class A: 15mm	N.A.	N.A.	/
				Class B: 50mm	Pass	Pass	/
				Class C: 100mm	N.A.	N.A.	/
The test run-up distance				500mm			
Direction		Condition		The part of the wheelchair came into contact with the obstacle		Remark	
Obstacle climbing		Normal run		No such parts		/	
		With a run-up		No such parts		/	
		With the wheelchair facing rearwards		No such parts		/	
		With a run-up as well as the wheelchair facing rearwards		No such parts		/	
Obstacle descending		Normal run		No such parts		/	
		With the wheelchair facing rearwards		No such parts		/	
8.1.7 Static stability							
The wheelchair shall meet or exceed the minimum requirements for static stability.							
Stability direction				Tipping angle (Least stable)			
Forward		Front wheels locked		13.8°			
		Front wheels unlocked		15.2°			
Rear		Rear wheels locked		N.A.			
		Rear wheels unlocked		16.2°			
		Antitip devices		N.A.			
Sideways		Left		10.8°			
		Right		10.8°			
Class A: 6° minimum slope or the rated slope claimed by the manufacturer if greater. Class B: 9° minimum slope or the rated slope claimed by the manufacturer if greater. Class C: 15° minimum slope or the rated slope claimed by the manufacturer if greater.							

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No.	Test Item	Standard Clause	Performance Indicator		Test Result	Item Conclusion	Note
7	Maximum speed	8.1.8	The maximum speed of the wheelchair when travelling forwards and travelling in reverse on the horizontal shall not exceed the maximum speed requirements specified in Table 1 for the type class of the wheelchair.	Forwards horizontal speed: 15km/h	11.1 km/h	Pass	/
				Reverse horizontal speed: 70 % of maximum forward speed of the wheelchair or 5 km/h whichever is lower	1.6km/h	Pass	/
8	Distance range	8.1.9	The theoretical continuous driving distance range for the wheelchair shall not be less than the requirement specified in Table 1 for the type class of the wheelchair.	Class A: 15km	N.A.	N.A.	/
				Class B: 25km	32km	Pass	The manufacturer claims that the 5h discharge rate capacity is 12Ah.
				Class C: 35km	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
9	Armrests: resistance to downward forces	8.2	$F = \frac{m_d \times g \times S}{2 \times \cos 15^\circ}$	N.A.	N.A.	/
	Footrests: resistance to downward forces		$F = m_d \times g$	N.A.	N.A.	/
	Tipping levers		$F = \frac{20}{15} (m_d + m_w) g$	N.A.	N.A.	/
	Handgrips		$F = 750 \pm 23 (N)$	N.A.	N.A.	/
	Armrests: resistance to upward forces		$F = \frac{S(m_d + m_w)g}{3 \times \cos 10^\circ}$	N.A.	N.A.	/
	Footrests: resistance to upward forces		Each side structure(two-piece footrests) $F = \frac{S(m_d + m_w)g}{4}$	N.A.	N.A.	/
			Centre of one-piece footrests $F = \frac{S(m_d + m_w)g}{2}$	N.A.	N.A.	/
	Push handles: resistance to upward load		Each single push handle $F = \frac{S(m_d + m_w)g}{3}$	N.A.	N.A.	/
			Centre of bar-type handle $F = \frac{2 \times S(m_d + m_w)g}{3}$	N.A.	N.A.	/
Backrest: resistance to impact		Support the pendulum so that the rigid bar is at an angle of $30^\circ \pm 2^\circ$ to the vertical and then allow it to fall freely and strike the back of the wheelchair.	Pass	Pass	/	

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
9	Handrim: resistance to impact	8.2	Raise the pendulum so that its longitudinal axis is at the angle of $45^{\circ} \pm 2^{\circ}$ and then release it so that it strikes the handrim.	N.A.	N.A.	/
	Castors: resistance to impact		Raise the pendulum so that its longitudinal axis is at θ_0^{+3} to the vertical and then release it so that it strikes the castor wheel. ($\theta = 52^{\circ}$)	Pass	Pass	/
	Footrests: resistance to impact					
	Lateral impact		raise the pendulum so that its longitudinal axis is at θ_0^{+3} to the vertical and release it so that it strikes the footrest. ($\theta = 52^{\circ}$)	N.A.	N.A.	/
	Longitudinal impact			N.A.	N.A.	/
	Front structure: resistance to impact					
	Frontal impact		Raise the pendulum so that its longitudinal axis is at θ_0^{+3} to the vertical and then release it so that it strikes the front structure of the wheelchair. ($\theta = 52^{\circ}$)	N.A.	N.A.	/
	Offset impact			N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
9	Two-drum test	8.2	Run the machine until the "reference drum" has completed 200000 revolutions or any higher figure claimed by the manufacturer and then stop the test.	Pass	Pass	/
	Drop test		Run the machine until 6666 cycles have been completed.	Pass	Pass	/
10	Wheelchair s for use as seats in motor vehicles	8.3	If the manufacturer specifies that the intended use of the wheelchair includes use as a seat in a motor vehicle by an occupant of mass 22 kg or greater, the wheelchair shall conform to the performance requirements of ISO 7176-19:2008 with the following modifications.	N.A.	N.A.	/

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8.4 Climatic performance						
No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
11	Cold operating conditions and resistance to condensation	8.4	The wheelchair shall continue to function according to the manufacturer's specifications after being subjected to each of the tests specified in Clause 8. At the end of testing, there shall be no evidence of water that could result in reduction of clearances and creepage distances below the applicable values specified in IEC 60601-1 for degree of pollution 3. NOTE This applies only to creepage and clearance distances between conductors that are equal to, or less than, those specified in IEC 60601-1 for degree of pollution 3, that would carry a continuous current of more than 5 A when leakage occurs, and that are in enclosures where water ingress has occurred during the test specified in 8.6. When the wheelchair is tested as specified in Clause 8: —it shall meet the requirements of the functional check specified in Clause 9; —no driven part shall exhibit unintended movement during exposure to the specified test conditions.	Pass	Pass	/
	Hot operating conditions			Pass	Pass	/
	Cold storage conditions			Pass	Pass	/
	Hot storage conditions			Pass	Pass	/
	Protection against ingress of liquids			Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
12	Foot supports, lower leg support assemblies and arm supports	9.1	The wheelchair shall be fitted with foot supports that have a means of positioning the occupant's feet at the required height and prevent the occupant's feet from sliding backwards.	Pass	Pass	/
			Any swing away, movable or removable foot support, lower leg support assembly or arm support fitted on the wheelchair shall:			
			a) incorporate a means to locate it securely in any intended operating position,	N.A.	N.A.	/
			b) be adjustable in increments not exceeding 25 mm,	N.A.	N.A.	/
			c) be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair,	Pass	Pass	/
			d) be within the reach space shown in Figure 1, and	Pass	Pass	/
			e) be operable without the use of tools.	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
12	Foot supports, lower leg support assemblies and arm supports	9.1	Where the wheelchair has separate foot supports which have a gap between them or the possibility of a gap being formed when they are loaded, f) means to prevent the occupant's feet from sliding into the gap shall be provided, or g) when the foot supports are tested in accordance with 9.1.2.2, any gap between them shall meet the requirement for safe distances between stationary parts specified in EN 12182.	N.A.	N.A.	/
13	Component mass	9.2	If the wheelchair is intended to be dismantled for storage or transportation, any component that requires moving or handling that has a mass greater than 10 kg shall be provided with suitable handling devices (e.g. handles). The manufacturer shall provide information indicating the points where such components can be lifted and describing how they shall be handled during disassembly, lifting, carrying, and assembly to reduce risks to the person or persons moving or handling them.	N.A.	N.A.	/
14	Pneumatic tyres	9.3	All pneumatic tyres on the wheelchair shall have the same type of valve connection. Valves should be readily accessible when using the intended inflating tool.	Pass	Pass	/
			The tyres or the rims shall be marked with the maximum pressure in kPa, bar or PSI.	240 KPa	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
15	Anterior pelvic support	9.4	The wheelchair shall have provision for an anterior pelvic support to be fitted.	Pass	Pass	/
			The manufacturer of the wheelchair shall have available as an option an anterior pelvic support which can be used with that provision.	Pass	Pass	/
16	Upholstered composite parts	9.5.1	For upholstered parts which are composites of cover and filling, with or without a support base or interliner, the complete composite shall be tested by the methods specified in EN 1021-2:2006 or ISO 8191-2:1988. Progressive smouldering ignition and flaming ignition as defined in the Standard applied shall not occur.	Not tested	/	/
17	Foam materials	9.5.2	For foam materials which form all or part of a seat, back support, postural support, arm support or lower leg support and which consist of foam material with or without an integral skin, the material of each part shall be tested with the source applied centrally to the surface intended to support the occupant by the methods specified in EN 1021-2:2006 or ISO 8191-2:1988 (see Figure 2). Progressive smouldering ignition and flaming ignition as defined in the Standard applied shall not occur.	Not tested	/	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
18	Other parts in contact with the occupant	9.5.3	For sling seats, sling backs, belts, restraint harnesses, foot supports and clothing guards, the material of each item shall be tested with the source applied centrally to the surface intended to contact or support the occupant by the methods specified in EN 1021-2:2006 or ISO 8191-2:1988. Progressive smouldering ignition and flaming ignition as defined in the Standard applied shall not occur. Belts that are intended for use as restraints in motor vehicles may, as an alternative, meet the requirements of FMVSS 302 or equivalent.	Not tested	/	/
19	Power and control systems	9.5.4	b) The power and control system of the wheelchair shall meet the requirements of ISO 7176-14:2008, 9.7, resistance to ignition.	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
20	Means for operating brakes	10.1	a) Means for operating brakes shall: 1) be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair;	Pass	Pass	/
			2) be within the reach space shown in Figure 1, if the wheelchair is intended to be operated by the occupant;	Pass	Pass	/
			3) be within the reach space shown in Figure 3, if the wheelchair is intended to be operated solely by an assistant;	N.A.	N.A.	/
			4) have operating forces for engaging and disengaging that do not exceed those stated in Table 1 when tested in accordance with 10.1.2;	59N	Pass	/
			b) If one or more brake levers are fitted to a wheelchair in the form used on bicycles and mopeds: 1) for wheelchairs with a maximum occupant mass not greater than 150 kg, the force applied to each lever to hold the loaded wheelchair stationary on the rated slope shall not exceed 60 N;	59N	Pass	/
			2) for wheelchairs with a maximum occupant mass greater than 150 kg, the force applied to each lever to hold the loaded wheelchair stationary on the rated slope should not exceed 60 N;	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
20	Means for operating brakes	10.1	3) the handgrip width of such brake levers when no force is applied, measured 15 mm from the end of the brake lever, shall not be greater than 100 mm and should not be greater than 80 mm (see Figure 4).	64mm	Pass	/
			c) Means for releasing parking brakes shall be protected against activation caused by accidental contact.	Pass	Pass	/
21	Braking functions	10.2	a) The wheelchair shall have a running brake which operates independently of tyre wear and tyre inflation pressure and which does not exceed the maximum stopping distance specified in Table 2 when tested in accordance with 10.2.2.1.	Horizontal N:0.7m R:N.A. E: N.A. 6°slope N:1.8m R: N.A. E: N.A.	Pass	/
			b) The wheelchair shall have a running brake which, when operated after the wheelchair has been put into freewheel mode, shall bring the wheelchair to a stop.	Pass	Pass	/
			c) The wheelchair shall have an automatic brake, which operates independently of tyre wear and tyre inflation pressure and which is operated by releasing the control device to achieve a zero speed command (e.g. spring loaded disc brake).	Not tested	/	/
			d) The wheelchair shall have a parking brake which operates independently of tyre wear and tyre inflation pressure (e.g. drum brake in wheels, spring loaded disc brake).	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
21	Braking functions	10.2	e) Parking brakes shall meet the parking brake effectiveness requirement in Table 1 when tested in accordance with 10.2.2.2.	Uphill: 16.2° Downhill: 13.8°	Pass	/
			f) Parking brakes shall be operable when there is no power from the battery supplying the drive system.	Pass	Pass	/
			g) Parking brakes shall be operable when the wheelchair is in freewheel mode (see NOTE 1).	Pass	Pass	/
			h) If they are subject to wear, parking brakes shall have provision for adjustment and/or replacement as specified by the manufacturer.	Pass	Pass	/
			i) If the wheelchair is fitted with arm supports that can be moved or removed to enable transfer, when tested in accordance with 10.2.2.3, engaged parking brakes shall not have parts that protrude above the level of the occupied seat.	N.A.	N.A.	/
			j) When parking brakes are tested in accordance with 10.2.2.4, no parking brake mechanism shall move from the pre-set position and no component or assembly of parts shall show visible signs of cracks, breakages, gross deformations, free play, loss of adjustment or any other damage that adversely affects the function of the wheelchair.	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
21	Braking functions	10.2	k) Following testing of the parking brake in accordance with 10.2.2.4, parking brakes shall meet the parking brake effectiveness requirement in Table 1 when tested again in accordance with 10.2.2.2.	Pass	Pass	/
22	Freewheel device	10.3	The wheelchair shall be fitted with a freewheel device that shall — be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair,	Pass	Pass	/
			— be within the reach space shown in Figure 1, if the wheelchair is intended to be operated by the occupant,	N.A.	N.A.	/
			— be within the reach space shown in Figure 3, if the wheelchair is intended to be operated solely by an assistant;	N.A.	N.A.	/
			— have operating forces for engaging and disengaging that do not exceed those stated in Table 1,	N.A.	N.A.	/
			— be operable without detaching any parts,	Pass	Pass	/
			— not depend on the battery power supplying the motor drive system,	Pass	Pass	/
			— have two defined positions including clear indication of freewheel mode and drive mode,	Pass	Pass	/
			— prevent use of the wheelchair's drive system, if the freewheel device is activated.	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
22	Freewheel device	10.3	A battery independent from the motor drive battery may be used to supply energy to enable freewheel mode.	N.A.	N.A.	/
			Freewheel devices shall be protected against activation caused by accidental contact.	Pass	Pass	/
23	Operations intended to be carried out by the occupant and/or assistant	11.1	Wheelchairs shall be designed to facilitate ease of operation by the occupant and/or assistant as specified in the manufacturer's instructions. Examples include: — operation of adjustable seating and adjustment of postural supports, — use of detachable components, including removable arm supports, lower leg support assemblies, etc., to facilitate safe transfers into and out of the wheelchair, — use of folding mechanisms, including folding frames, etc., to facilitate storage and transportation of unoccupied wheelchairs, — carrying out maintenance, including use of tools, etc., — use of manual steering controls, — use of braking systems and freewheel devices, — use of assistant controls, — use of control devices.	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
24	Controls intended for operation by the occupant	11.2	Controls intended to be operated by the occupant while seated shall be within the occupant reach space shown in Figure 1. The following controls, if fitted, are included: — on/off switch or key, — speed regulator, — speed pre-setting, — running brake, — parking brake, — audible warning device, — direction indicator, — direction switch, — control device, — manual steering controls, — lighting controls, — seating adjustments, — detachable components, including removable arm supports, lower leg support assemblies, etc., to facilitate safe transfers into and out of the wheelchair, — steering controls, — freewheel device.	Pass	Pass	/
25	Controls intended for operation by an assistant	11.3	Controls intended to be operated by an assistant shall be within the reach space shown in Figure 3. Examples include: — brakes, — control devices, — push handles, and — electrical ancillary equipment.	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
26	Assistant control unit, push handles and handgrips	11.4	Switches intended to be operated by an assistant while driving the wheelchair shall be attached to an assistant control unit. When an assistant control unit is fitted, — the unit shall be positioned behind the wheelchair's back support, between 900 mm and 1 200 mm from the floor to the centre of the operating means for the control device (e.g. joystick handle), and	N.A.	N.A.	/
			— there shall be a means to support the assistant's hand or hands used to operate the control device.	N.A.	N.A.	/
			When push handles are fitted, no part of the wheelchair shall lie within a space to the rear of the wheelchair bounded by the following: — a plane at 85° to the horizontal, that touches the rearmost points of the push handles as shown in Figure 6;	N.A.	N.A.	/
			— two planes not less than 350 mm apart equidistant from a vertical plane parallel to the forward direction of travel that bisects the wheelchair, unless the intended occupant is a child;	N.A.	N.A.	/
			— the horizontal test plane.	N.A.	N.A.	/
			When the wheelchair is fitted with steering and/or manoeuvring handgrips for use by an assistant, the handgrips shall be at least 75 mm in length and between 20 mm and 50 mm in diameter.	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
26	Assistant control unit, push handles and handgrips	11.4	When manoeuvring handgrips are fitted with controls that are intended to be used by being gripped by one hand, the handgrip width when no force is applied shall not be greater than 100 mm and should not be greater than 80 mm (see Figure 4).	N.A.	N.A.	/
27	Operating forces	11.5	All controls, except for means to operate brakes, shall have operating forces for engaging and releasing that do not exceed those stated in Table 1 when tested in accordance with 11.5.2.	Pass	Pass	/
			Controls	The calculated operating force	Allowable operating forces	Notes
			Operate rod	2N	5N	/
			Alarm button	3N	5N	/
			In addition, to achieve the intended function of the system or device being operated, for knobs intended to be gripped and turned by one hand	N.A.	N.A.	/
			— where the diameter of the knob is greater than or equal to 25 mm and the force is transmitted by friction, the numerical value of the torque, expressed in Nm, shall not be greater than 0,05 times the numerical value of the diameter of the knob, expressed in mm, and	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
27	Operating forces	11.5	— where the diameter of the knob is less than 25 mm diameter, the numerical value of the torque, expressed in Nm, shall not be greater than 0,025 times the numerical value of the diameter of knob, expressed in mm.	N.A.	N.A.	/
28	Seating adjustments for tilt and recline systems	11.6	If the manufacturer specifies that the seating can be adjusted by an assistant or the occupant or both while the occupant is seated, the assistant and/or the occupant shall not have to lift a mass (e.g. the combined mass of the occupant and the seating) which presents a moving and handling safety hazard to the assistant and/or the occupant. Controls for seating adjustments intended to be operated by the occupant shall be accessible to the occupant from all seating positions.	N.A.	N.A.	/
29	Electrical systems General requirements	12.1	The wheelchair shall conform to the requirements of ISO 7176-14:2008, except as specified in 9.5.4.	Pass	Pass	/
			The wheelchair and battery charger shall conform to the requirements of ISO 7176-21:2009.	Not tested	/	/
			In addition, wheelchairs that include an on-board battery charger shall conform to the applicable electrical requirements of EN 60601-1:2006.	Not tested	/	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
30	Circuit protection	12.2	The driving, braking and steering functions shall not be affected by the operation of the means of protection of any other circuit.	Pass	Pass	/
			Lights, direction indicators and hazard warning flasher functions shall not be affected by the operation of the means of protection of any other circuit.	Pass	Pass	/
			Circuit protection devices that carry the total current of the battery set may be used.	Pass	Pass	/
31	Battery chargers	12.3	Battery chargers for wheelchairs shall conform to the requirements of ISO 7176-14:1997 that apply to battery chargers, together with the following provisions:	Not tested	/	/
			a) battery chargers shall indicate when charging is in progress and when charging is complete;	Pass	Pass	/
			b) battery chargers shall have the capability of charging batteries discharged to 70 % of their nominal voltage;	Pass	Pass	/
			c) battery chargers shall operate without the need for intervention or supervision apart from connecting and turning on at the start of charging and turning off and disconnecting at the end of charging;	Pass	Pass	/
			d) carry-on and on-board battery chargers shall meet the environmental protection requirements of IPX4 when tested in accordance with EN 60529:1991 and shall meet the Class II Test Voltage requirements of EN 60335-1:2012 following the test.	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
32	Charging connector	12.4	The wheelchair shall have a charging connector that is readily accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair. The requirement is verified by inspection.	Pass	Pass	/
33	Battery enclosures and containers	12.5	Battery enclosures and containers shall provide protection so that it should not be possible for liquids dropping from above to enter into them and onto any cell or battery they contain.	Pass	Pass	/
34	Emergency stop	12.6	The wheelchair shall be fitted with one or more emergency stop devices to enable actual or impending danger to be averted.	N.A.	N.A.	/
			Each emergency stop device shall: — be clearly identifiable, clearly visible and quickly accessible by the intended operator, and	N.A.	N.A.	/
			— stop the hazardous process as quickly as practicable, without creating additional risks.	N.A.	N.A.	/
			Once active operation of the emergency stop device has ceased following a stop command, that command shall be sustained by the wheelchair until that engagement is specifically overridden. It shall not be possible to engage the device without triggering a stop command. It shall be possible to disengage the device only by an appropriate operation, and disengaging the device shall not restart the wheelchair but only permit restarting.	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
34	Emergency stop	12.6	The emergency stop function shall be available and operational at all times, regardless of the operating mode.	N.A.	N.A.	/
			Emergency stop devices shall be a back-up to other safeguarding measures and not a substitute for them.	N.A.	N.A.	/
			Additional emergency stop devices may be attached to a wheelchair to be operated by an assistant. Where the intended occupant has an impairment which restricts their ability to operate an emergency stop device, the risk assessment should take this into account.	N.A.	N.A.	/
35	Lighting	12.7	Wheelchairs intended by the manufacturer for outdoor use shall be supplied with integral lighting suitable for the operations concerned where the absence thereof is likely to cause a risk despite ambient lighting of normal intensity.	Pass	Pass	/
			Wheelchairs might be subject to national requirements for lighting and reflectors.	N.A.	N.A.	/
			If there are no national requirements, the manufacturer should conform to applicable automotive Directives of the European Union (76/756/EEC [12], 97/28/EC [13]).	Pass	Pass	/
36	Switching off while driving	12.8	If the wheelchair is switched off while driving on the horizontal, it shall come to a stop within the maximum stopping distances specified in Table 2.	Not tested	/	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
37	Software	12.9	Software that is embedded in the wheelchair or is an integral part of the wheelchair, and the malfunction of which could give rise to a hazardous situation, shall be developed and maintained in accordance with EN 62304:2006. This requirement does not apply to software produced before the date of withdrawal of EN 12184:2009, but it does apply to software modifications that are made after that date.	N.A.	N.A.	/
38	Information supplied by the manufacturer general	13.1	Each wheelchair shall be provided with documentation and labelling that conform to the requirements in EN 12182 and ISO 7176-15:1996.	Pass	Pass	/
			In addition, the manufacturer shall provide the documentation in three separate sections: pre-sale, user and service information as specified in 13.2, 13.3 and 13.4. These may be provided as separate printed documents or in other forms of media to meet the needs of individual occupants or their assistants.	Pass	Pass	/
			For the requirements in 13.2 and 13.3, unless otherwise specified, all linear dimensions shall be expressed in millimetres and all masses shall be expressed in kilograms.	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
39	Pre-sale information	13.2	In addition to the requirements of 13.1, pre-sale information shall include the following:			
			a) information on how to obtain the user information in a format appropriate for use by visually impaired people;	N.A.	N.A.	/
			b) a description of the intended occupant of the wheelchair, including the occupant's mass and any specific requirements for the occupant's functional capability, visual ability and cognitive ability suitable for operating the wheelchair safely in its intended environment;	Pass	Pass	/
			c) the intended operator (occupant, assistant or both);	Pass	Pass	/
			d) a description of the intended use and the intended environment;	Pass	Pass	/
			e) the type class of the wheelchair: Class A, Class B or Class C;	Class B	Pass	/
			f) the overall dimensions (width, length and height) of the wheelchair and its mass when it is ready for use and, if applicable, when it is folded or dismantled;	Pass	Pass	/
			g) if the overall dimensions of the wheelchair when it is ready for use exceed the values recommended in A.1.1, a clear statement that the wheelchair is larger than the recommended dimensions;	Pass	Pass	/
			h) the minimum width of corridor in which the wheelchair can be turned to face the opposite direction;	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
39	Pre-sale information	13.2	i) the rated slope, expressed in degrees;	Pass	Pass	/
			j) the standard options that are available for the wheelchair;	Pass	Pass	/
			k) the type(s) of tyres that can be used on the wheelchair;	Pass	Pass	/
			l) operator adjustments;	N.A.	N.A.	/
			m) if the wheelchair can be dismantled or has any removable parts, the mass of the heaviest part;	N.A.	N.A.	/
			n) information concerning whether the removal of parts or accessories intended by the manufacturer to be removed without the use of tools will have adverse or beneficial effects on the wheelchair;	N.A.	N.A.	/
			o) information on whether or not the wheelchair is intended to be used as a seat in a motor vehicle, and whether and how this depends on the standard options referred to in j);	N.A.	N.A.	/
			p) information on whether the unoccupied wheelchair is suitable for land and/or air transport;	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
39	Pre-sale information	13.2	q) the theoretical continuous driving distance range, expressed in kilometres, that the wheelchair can travel under its own power on the horizontal when tested in accordance with ISO 7176-4:2008, with the addition of a note explaining that the distance will be reduced if the wheelchair is used frequently on slopes, rough ground or to climb kerbs, etc.; This additional requirement may be reduced to some degree if an accurate charge level indicator is fitted.	Pass	Pass	/
			r) the maximum height of kerb which the wheelchair can descend safely;	Pass	Pass	/
			s) if a programmable controller is fitted, information on the method of programming, the competency required to carry out the programming and the effects it can have on driving performance.	N.A.	N.A.	/
40	User information	13.3	User information shall be provided by the manufacturer with each wheelchair. Further copies shall also be available for any subsequent user of the wheelchair. User information shall contain all pre-sale information and the following: a) the unique identification number of the wheelchair or information on the location of the unique identification number on the wheelchair;	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
40	User information	13.3	b) any adjustment or settings required before the wheelchair can be used and warnings of how adjustments or settings affect stability;	Pass	Pass	/
			c) where applicable, information on any adjustments that can be made and the competency required to carry out these adjustments;	N.A.	N.A.	/
			d) instructions on operation of all controls, including brakes;	Pass	Pass	/
			e) instructions on how to engage and disengage the drive system;	Pass	Pass	/
			f) the wheelchair manufacturer's recommended tyre pressure(s), expressed in kPa, bar or PSI;	Pass	Pass	/
			g) instructions for dealing with tyre punctures, where pneumatic tyres are fitted;	Pass	Pass	/
			h) the battery type and nominal voltage;	Pass	Pass	/
			i) instructions for battery maintenance;	Pass	Pass	/
			j) instructions for operating the battery charger, including warnings regarding any potential safety hazards (e.g. a possibility of gas accumulating in the charging area, use of the wrong type of battery charger);	Pass	Pass	/
			k) if required by the risk analysis, instructions for fitting an additional emergency stop device where the intended occupant has an impairment which could restrict their ability to operate one;	N.A.	N.A.	/
			l) instructions on whether and how the wheelchair can be folded to assist in storage or transport;	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
40	User information	13.3	m) instructions on dismantling and re-assembly of the wheelchair or any removable parts;	Pass	Pass	/
			n) instructions regarding transport of the wheelchair when it is unoccupied (e.g. in a car or aeroplane);	N.A.	N.A.	/
			o) the masses of parts of the wheelchair that are expected to be handled during dismantling, reassembly, or carrying;	N.A.	N.A.	/
			p) the positions of points where the component parts can be gripped for safe moving and handling and/or a method for handling during dismantling, assembly or carrying;	N.A.	N.A.	/
			q) if the manufacturer specifies that the wheelchair is intended for use as a seat in a motor vehicle, the method of attaching wheelchair tiedown and occupant restraints, and recommendations about suitable tiedown and restraint systems;	N.A.	N.A.	/
			r) if the manufacturer specifies that the wheelchair is not intended for use in the motor vehicle, a warning to that effect, together with the symbol shown in Figure 7;	N.A.	N.A.	/
			s) instructions on how to obtain and fit the optional anterior pelvic support (see 9.4) if it is not supplied with the wheelchair;	N.A.	N.A.	/
			t) the positions of points intended to carry additional loads;	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
40	User information	13.3	u) instructions for preparing the wheelchair for long-term storage (e.g. longer than four months) and for preparing it for use afterward;	Pass	Pass	/
			v) a warning that the wheelchair might disturb the operation of devices in its environment that emit electromagnetic fields (e.g. alarm systems of shops, automatic doors, etc.);	Pass	Pass	/
			w) a warning that the driving performance of the wheelchair can be influenced by electromagnetic fields (e.g. those emitted by portable telephones, electricity generators or high power sources);	Pass	Pass	/
			x) a warning that the stopping distance on slopes can be significantly greater than on level ground;	Pass	Pass	/
			y) a warning that surface temperatures can increase when exposed to external sources of heat (e.g. sunlight);	Pass	Pass	/
			z) a warning for trapping hazards (e.g. pinch points);	Pass	Pass	/
			aa) a warning if driving characteristics can be adjusted outside the limits specified in Table 1 and Table 2;	N.A.	N.A.	/
			bb) a warning if the adjustments of seating or wheel positions can be set outside safe limits;	N.A.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
40	User information	13.3	cc) if the overall width or overall length of the wheelchair when it is ready for use exceed the applicable values recommended in A.1.1, a warning concerning access to emergency escape routes;	N.A.	N.A.	/
			dd) the level of resistance to ignition of materials and assemblies;	N.A.	N.A.	/
			ee) information on the recycling of used batteries and of the wheelchair;	Pass	Pass	/
			ff) if the characteristics of the wheelchair (including occupant as applicable) exceed the limits specified in Annex M of the Technical Specification for Interoperability relating to Accessibility for Persons with Reduced Mobility (PRM-TSI), a statement to that effect (see Annex D);	N.A.	N.A.	/
			gg) information on how to find out about product safety notices and product recalls, for example by ensuring the supplier has up-to-date contact information;	Pass	Pass	/
			hh) the expected service life of the wheelchair;	Pass	Pass	/
			ii) the name and address of the manufacturer;	Pass	Pass	/
			jj) the name and address of the authorised representative, where the manufacturer does not have a registered place of business in the European Union.	Pass	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Item Conclusion	Note
41	Service information	13.4	The service information shall contain all the pre-sale information, user information and instructions necessary for the maintenance, adjustment and repair of the wheelchair and for the replacement of parts.	Pass	Pass	/
42	Labelling	13.5	In addition to the requirements of 13.1, the manufacturer shall apply permanent labelling for the following: a) devices for disengagement of the drive system, showing engaged and disengaged positions, including a warning that the drive system should be re-engaged before an occupant is left unattended or attempts to operate the wheelchair;	N.A.	N.A.	/
			b) for wheelchairs where the intended use includes use as a seat in a motor vehicle, the position of attachment points for wheelchair tie-down and occupant restraint systems (WTORS);	N.A.	N.A.	/
			c) for wheelchairs not intended to be used as a seat in a motor vehicle, a warning to that effect, including the symbol shown in Figure 7 with a diameter not less than 15 mm, in the same location as the labeling required by ISO 7176-15:1996;	N.A.	N.A.	/
			d) for battery chargers that are not on-board chargers, information and connection details specified in Clause 9 of ISO 7176-14:1997;	Pass	Pass	/
			e) for Class A wheelchairs not intended for use outdoors, a warning to that effect.	N.A.	N.A.	/

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ISO 7176-22:2000		
Adjustable parameter	Type of equipment (size, article number, etc.)	Value/Position/Measure
Air pressure in pneumatic tyres, drive wheels(6.1.1)	SLLT0038	240kPa
Air pressure in pneumatic tyres, castors(6.1.1)	WDZDJ001	240kPa
Distance between the brake blocks and their contact surfaces(6.1.3)	N.A.	N.A.
Drive-wheel axle position, horizontal(6.3.2.1)	/	Not adjustable
Drive-wheel axle position, vertical(6.3.2.2)	/	Not adjustable
Drive-wheel camber(6.3.2.3)	/	Not adjustable
Drive-wheel track width(6.3.2.4)	/	Not adjustable
Castor stem housing position, horizontal(6.3.3.1)	/	Not adjustable
Castor stem housing position, vertical(6.3.3.2)	/	Not adjustable
Castor wheel axle position, vertical(6.3.3.3)	/	Not adjustable
Castor wheel track width(6.3.3.4)	/	Not adjustable
Castor stem angle, fore-aft plane(6.3.3.5)	/	Not adjustable
Castor stem angle, lateral plane(6.3.3.6)	/	Not adjustable
Seat depth(6.3.4.2)	BTZD0030	Not adjustable
Backrest height(6.3.4.3)	/	Not adjustable
Seat height(6.3.4.4)	BTZD0030	Not adjustable
Seat plane angle(6.3.5)	/	Not adjustable
Backrest angle(6.3.6)	/	Not adjustable
Leg-to-seat-surface angle(6.3.7)	/	Not adjustable
Footrest angle(6.3.8.1)	/	Not adjustable
Footrest clearance(6.3.8.2)	/	Not adjustable

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Adjustable parameter	Type of equipment (size, article number, etc.)	Value/Position/Measure
Control device, mounting(6.3.9.1)	/	/
Control device, electrical settings(6.3.9.2)	/	11.1 km/h
Other electrical control devices(6.3.9.3)	battery	At the battery bay
Other components(6.3.10)	N.A.	N.A.

Final adjustments		
Backrest angle[7a]]	/	15.8°
Seat plane angle[7b]]	/	7°
Castor stem angle[7c]]	/	0°
Distance between the brake blocks and their contact surfaces[7d]]	N.A.	N.A.

Dummy set up		
Calculated seat-to-back angle[9a]]	N.A.	/
Dummy size[9b]]	125kg	/
Dummy seat-to-back angle[9c)3]]	125kg	90°

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Photo Page



front view



back view



lateral view



perspective



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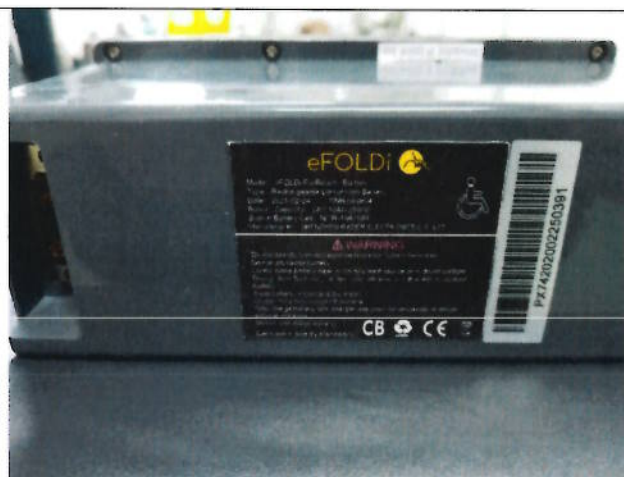
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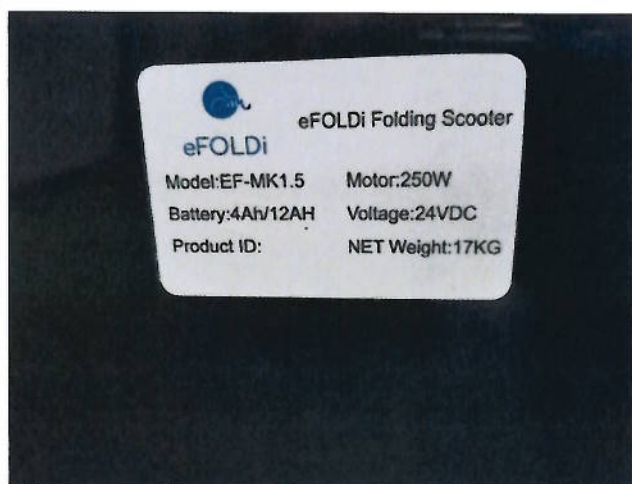
Photo Page



the photo of sample during testing



battery



label

